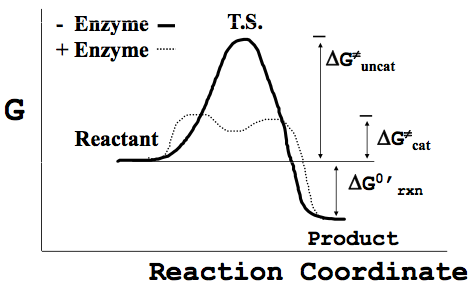
**Lecture: Enzymes / Dignam**

1. Given a reaction, be able to indicate what category the enzyme would fall into.

|  |  |  |
| --- | --- | --- |
| **ENZYME** | **RXN TYPE** | **E.G.** |
| Oxidoreductases | Oxidation/reduction | Lactate dehydrogenase |
| Tranferases |  |  |
| Hydrolases |  |  |
| Lyases |  |  |
| Isomerases |  |  |
| Ligases |  |  |

1. Label the components of the reaction coordinate graph:



Labels:

- Enzyme Product

+ Enzyme Reactant

∆G0´rxn Transition State

∆G≠uncat

∆G≠cat

1. Which of the following statements about enzymes is false?
2. Enzymes change the standard free energy of a reaction
3. Enzymes undergo conformational transitions to promote catalysis
4. Offer alternative pathways with lower energy barriers
5. Accelerate the reaction rate in both directions
6. Indicate whether the following statements are true or false. If false, write corrections so that the statement is true (by crossing out, inserting, and/or changing words, etc.).
7. \_\_\_\_\_ ∆G tells us about the rate of the reaction
8. \_\_\_\_\_ Enthalpy is defined as the heat of the reaction
9. \_\_\_\_\_ Negative enthalpy (-∆H) indicates heat is being absorbed
10. \_\_\_\_\_ Entropy is translational and rotational mobility
11. \_\_\_\_\_ In order to increase the favorability of a reaction, ∆G should be negative
12. \_\_\_\_\_ In order to have a spontaneous reaction, 🡩∆H and 🡩∆S in order to make ∆G negative
13. \_\_\_\_\_ Increasing G≠ will increase the rate of the reaction
14. \_\_\_\_\_ An enzyme has a lower affinity for a T.S. analog than for the substrate
15. \_\_\_\_\_ Enzymes lower the ∆G≠ and change the ∆G0´rxn
16. \_\_\_\_\_ Enzymes are not consumed during a reaction